

a rotor having pole cores and an excitation coil, being attached on an axially extending rotation shaft, so as to be located within said stator;

brackets, being thermally connected to said stator for supporting said stator, for supporting said rotation shaft at both sides of said rotor, and being closed at one side of said rotor;

cooling liquid passages provided in said brackets;

a cooling fan provided at the closing side of said rotor; and

a cooling fin provided in vicinity of said cooling liquid passages, said cooling fin being arranged so as to oppose said cooling fan in an axial direction of said rotor so as to enable generation of a circulating cooling air flow which flows from said cooling fan via said cooling fin to return to said cooling fan.

7. (amended) An alternator for use in a vehicle, comprising:

a stator having a stator core being formed in a cylindrical shape and a stator coil wound around said stator core;

a rotor having pole cores and an excitation coil, being attached on an axially extending rotation shaft, so as to be located within said stator;

brackets, being thermally connected to an outer periphery of said stator for supporting said stator, for supporting said rotation shaft at both sides of said rotor, and one of said brackets being closed at at least one side of said rotor;

an electric appliance disposed with respect to a side surface portion of one of said brackets for supporting said stator;

cooling liquid passages having an outer peripheral cooling liquid passage formed on an outer peripheral portion of at least the one of said brackets for supporting said stator, and a side surface cooling liquid passage formed on a side surface portion of the one of said brackets which closes the one side of said rotor;

at least one cooling fan, said at least one cooling fan being provided at the closed side of said rotor; and

a cooling fin provided in vicinity of said side surface cooling liquid passage, said cooling fin being arranged so as to oppose said cooling fan in an axial direction of said rotor so as to enable generation of a circulating cooling air flow which flows from said cooling fan via said cooling fin to return to said cooling fan.

9. (amended) An alternator for use in a vehicle, as defined in the claim 7, wherein said brackets have side surface portions for closing down at both sides of said rotor, and said at least one cooling fan is provided at the both sides of said rotor, respectively.

10. (amended) An alternator for use in a vehicle, as defined in the claim 7, wherein another said bracket has a side surface portion for opening another side of said rotor, and said at least one cooling fan includes another cooling fan for passing air outside at the other side of said rotor.

Please add the following new claims:

--16. An alternator for use in a vehicle, as defined in the claim 1, wherein said at least one cooling fan and said cooling fin are arranged and configured so that the cooling air flow flows from a central portion of said at least one cooling fan radially outwardly from a periphery thereof and radially inwardly via said cooling fin to return to the central portion of said at least one cooling fan.

17. An alternator for use in a vehicle, as defined in the claim 7, wherein said at least one cooling fan and said cooling fin are arranged and configured so that the cooling air flow flows from a central portion of said at least one cooling fan